BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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| Application of SAN DIEGO GAS & ELECTRIC COMPANY (U902E) for Approval of its Electric Vehicle-Grid Integration Pilot Program. | A.14-04-014<br>(Filed April 11, 2014) |

# PROTEST OF THE OFFICE OF RATEPAYER ADVOCATES TO THE APPLICATION OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E) FOR AUTHORITY TO IMPLEMENT A PILOT PROGRAM FOR ELECTRIC VEHICLE-GRID INTEGRATION


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**PROTEST OF THE OFFICE OF RATEPAYER ADVOCATES TO THE APPLICATION OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902-E) FOR AUTHORITY TO IMPLEMENT A PILOT PROGRAM FOR ELECTRIC VEHICLE-GRID INTEGRATION**

## I. INTRODUCTION

Pursuant to Rule 2.6 of the California Public Utilities Commission's Rules of Practice and Procedure, the Office of Ratepayer Advocates (ORA) protests San Diego Gas & Electric Company's (SDG&E) Application (A.) 14-04-014 which seeks Commission authorization to establish and implement a pilot program for electric vehicle-grid integration (VGI) and to establish a two-way balancing account to recover, in rates, the costs associated with the VGI Pilot Program. SDG&E anticipates that the proposed VGI Pilot Program would introduce an innovative hourly time-variant rate, provide associated grid-beneficial charging infrastructure for electric vehicles (EVs), and provide a mechanism to better determine the benefits of efficient integration of EV charging loads with the grid to all customers.[1]

[1] A.14-04-014, p. 1.

## II. SUMMARY OF ORA'S POSITION

The Commission should require SDG&E to amend its application to allow SDG&E to address ORA's concerns raised in this protest. ORA has identified the following issues regarding the proposed VGI Pilot Program and its rate design.

- SDG&E's Proposed Pilot Program is in effect a change in the Commission policy of utility ownership of EVSE;
- SDG&E has not justified the scale of, and expenses related to the proposed VGI Pilot Program;
- SDG&E's cost-effectiveness studies do not consider the scale of the proposed pilot program to determine the optimum size of the pilot program;
- The Application lacks quantitative analysis to justify multi-unit dwelling (MuD) and workplace siting;
- Surveys should be conducted before any substantial scale pilot is approved and implemented;
- ORA needs to review the reasonableness of the VGI rate components. These rates should properly reflect cost-causation and satisfy the Commission's main rate design goals;
- SDG&E should provide sample customer bill impacts based on tariff changes (i.e. bill impact showing a customer changes from a current EV rate or a regular residential rate schedule to the VGI rate) so that customers will be better informed about these rate choices;
- If the Commission determines that the ratepayers should provide some funding of the VGI pilot program, the costs should be assigned based on both generation and distribution revenue allocators; and,
- SDG&E's application does not demonstrate that the VGI Pilot Program has a stated and measurable primary goal to directly reduce GHG emissions.

ORA supports Plug-in Electric Vehicle (PEV)-related pilot programs that (1) are well-designed, (2) are based on focused studies of the results, (3) analyze

their impact on the grid and ratepayers, and (4) promote the adoption of PEVs. ORA does not support allocating considerable ratepayer funds to implement full scale, long term programs before studying their potential impact.

This Commission has spent considerable time and resources on two issues: (1) how to develop an effective electric vehicle (EV) charging market, and (2) the investor owned utility's role in developing that market. ORA appreciates SDG&E taking the initiative to develop an EV grid integration program, but its proposal needs to be amended to effectively address these two issues.

First, SDG&E's proposed VGI Pilot Program is of a much larger scale than other pilots this Commission has approved. Also, the estimated costs far exceed those of a typical pilot program.[2] Second, SDG&E's ownership of Electric Vehicle Service Equipment (EVSE) may conflict with Commission decisions prohibiting utilities from owning EVSE.[3]

SDG&E's application proposes two distinct pilot programs. The first is to build, install, operate and maintain 5,500 EV charging stations in MuD and workplaces throughout SDG&E's service territory. The second is to develop price signals to encourage SDG&E customers to purchase electric vehicles. SDG&E has much more experience with rate design than with building, installing, operating and maintaining EV charging stations. Combining these two projects into one would not be a cost effective way to either study the impact of Vehicle-Grid Integration on the grid, or to determine the effect charging stations in MuDs and workplaces would have on PEV adoption because the success of the entire project depends on the success of both. In other words, if SDG&E can design an accurate price structure but falls short on its goals to site, build, and maintain charging stations, the entire project will be deemed

[2] SCE's workplace pilot program was for 233 charging stations, with an estimated cost of $1,243,125 for the years 2012 through 2014. (SCE AL 2746-E, filed January 2013).

[3] See, Decision 11-07-029, July 14, 2011, p. 49.

unsuccessful and will provide little useful data. Separating the pilot program into two smaller programs may be a more effective way to achieve the results SDG&E anticipates. Therefore, for the foregoing reasons, the Commission should require SDG&E to amend its application to allow SDG&E to address ORA's concerns raised in this protest.

## III. DISCUSSION

ORA has reviewed SDG&E's application and supporting testimony and has identified the following issues:

### A. SDG&E's Proposed Pilot Program is in effect a change in the Commission policy of utility ownership of EVSE.

In D.11-07-029[4], the Commission prohibited the utilities from EVSE ownership:

> The benefits of utility ownership of electric vehicle service equipment do not outweigh the competitive limitation that may result from utility ownership, with the exception of electric vehicle service equipment used to charge their own electric vehicle fleets or provide workplace charging for utility employees.[5]

However, with anticipation of revisiting this prohibition, the Commission also stated:

> Should utilities present evidence in an appropriate proceeding of underserved markets or market failure in areas where utility involvement is prohibited, we will revisit this prohibition. Should the Commission revisit this issue, we will revisit the concerns outlined above, among others, including the potential cost-subsidization implications of any utility proposal to own public electric vehicle service equipment.[6]

[4] Alternative Fuels Vehicles Proceeding (R.09-08-009).

[5] D.11-07-029, p.82.

[6] D.11-07-029, p.50.

SDG&E states that "it will contract with third parties to build, install, operate and maintain EV charging facilities under a service level agreement, to SDG&E's VGI specifications, and under SDG&E's overall supervision."[7] SDG&E's application is unclear on who will own the EVSE charging stations. Only the testimony of Mr. J.C. Martin of SDG&E describes the infrastructure as "SDG&E-owned VGI charging technology installations at workplace and MuD locations." [8] But at a May 5, 2014 SDG&E VGI update workshop,[9] SDG&E clarified that it will own all EVSE and related infrastructure it proposes for the VGI Pilot Program.

To encourage the Commission to revisit its prohibition on utility ownership of EVSE, SDG&E claims that customers who could benefit from MuD and workplace charging are in underserved communities.[10] But the study SDG&E cited to support this claim does not include other pertinent data such as employment and income levels. Without such data, it is impossible to know if people who live in MuDs are in underserved markets. Further, drivers who charge at the workplace may have chargers at home that supply their charging needs for the entire day, in which case they would not be underserved.

Utility ownership of 5,500 charging stations in the San Diego area would create a formidable barrier to third parties who wish to enter the EVSE business and could be construed anti-competitive. This could also be a major disincentive for third parties to provide EVSE charging stations infrastructure in the San Diego area, and in effect could discourage prospective customers from purchasing PEVs by eliminating more competitive supply of EVSEs to the market.

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[7] A.14-04-014, p.2.

[8] Direct Testimony of J.C. Martin of SDG&E, Chapter 6, p. JCM-5.

[9] At the workshop SDG&E presented their EV pilot program and responded to questions from various parties.

[10] A.14-04-014, p.2.

### B. SDG&E has not justified the scale and expenses related to the proposed pilot program.

The scale of the SDG&E-proposed VGI Pilot Program is much larger than a typical pilot program. For example, the Submetering Pilot Program from D. 13-11-002[11] consists of only 500 participants for each of the IOUs (SCE, SDG&E and PG&E). SDG&E's proposed VGI Pilot Program includes installation of 5,500 charging stations over the time span of 5 years.[12] One of the pilot program's goals is to study customer behavior in response to the incentives provided by the program. But this can be achieved in a much smaller program or a pilot limited to developing price signals to minimize financial risk both to third parties and to ratepayers. In fact, the size of the proposed VGI Pilot Program more clearly resembles a full-scale business model.

The cost of the SDG&E-proposed VGI Pilot Program is much larger than a typical pilot program.[13] The total revenue requirement for the proposed pilot project, which covers the capital costs of the proposed 5,500 charging stations, operation and maintenance (O&M), administration, and other costs are estimated to be just under $200 million.[14] This is a large sum compared to SCE's workplace pilot program.[15]

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[11] Alternative Fuels Vehicles Proceeding (R.09-08-009).

[12] A.14-04-014, p. 4.

[13] For example, SCE's workplace pilot program was for 233 charging stations, with an estimated cost of $1,243,125 for the years 2012 through 2014. (SCE AL 2746-E, filed January 2013).

[14] Direct Testimony of Jonathan B. Atun of SDG&E, Chapter 4, Appendix B, p. B2.

[15] See footnote 13.

### C. SDG&E's cost-effectiveness studies do not consider the scale of the proposed pilot program to determine the optimum size of the pilot program.

SDG&E's testimony concludes that the proposed pilot program is cost-effective for all stakeholders, including PEV owners and ratepayers in general.[16] However, many of the assumptions in the analysis are not clear. For example, the cost-effectiveness study does not provide the optimum size of the pilot program, or whether the number of charging stations should be lower or higher than the 5,500 charging stations proposed in SDG&E's VGI Pilot Program.

### D. The Application lacks quantitative analysis to justify MuD and workplace siting.

SDG&E's claims that "MuD and workplace siting has great potential to increase EV ownership and zero emission miles driven per EV"[17] is unsubstantiated. SDG&E offers no evidence to support the claim. Employment and income levels, for example, are also factors in EV ownership. Increasing the number of workplace or MuD charging stations will not automatically result in greater PEV sales and EV miles driven. A smaller pilot project to develop price signals may provide more accurate data to support this claim.

SDG&E states "prospective EV customers who could benefit from MuD and workplace charging sites may be currently underserved."[18] According to the survey[19] SDG&E refers to, MuD customers represent only 4% of the 3,881 respondents. This amounts to only 155 respondents (i.e., EV owners) who live in MuDs. This is a small number to justify MuD siting at ratepayers' expense.

There is no supporting evidence at this time that installing more EV charging stations will increase PEV ownership. SDG&E's survey of their employees'

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[16] Direct Testimony of J.C. Martin of SDG&E, Chapter 6, p. JCM-38.

[17] A.14-04-014, p. 2.

[18] A.14-04-014, p. 2.

[19] https://energycenter.org/clean-vehicle-rebate-project/vehicle-owner-survey/feb-2014-survey.

response to workplace PEV charging accessibility is a good start, but there needs to be additional surveys performed at other locations to justify both workplace and MuD siting of charging stations. Based on these surveys, SDG&E should state how many installations will be located in MuDs and how many in workplaces. Conducting surveys that will show an interest in MuD and workplace siting before launching a large-scale "pilot" such as SDG&E proposes would be a much more efficient use of ratepayers' funds. Therefore, SDG&E should be required to justify that MuD installations will increase EV ownership or EV miles driven before the Commission approves the SDG&E proposed VIG Pilot Program.

**E. Potential VGI Pilot Program Rate Design Issues.**

SDG&E's proposed Pilot Program rates include the following rate components:

- VGI Base Rate, which includes transmission, PPP, ND, CTC, RS, and DWR[20] bond charge components.
- VGI Commodity Rate, which includes CAISO day-ahead hourly price (Commodity base rate), a commodity critical peak pricing (C-CPP) hourly adder for system's top 150 hours, and day-ahead energy credit when actual day-of prices are lower than day-ahead by one cent or more.

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[20] PPP: Public Purpose Programs (A nonbypassable surcharge imposed on all retail sales to fund public programs, including research, development and demonstration, and energy efficiency activities, and possibly to support low income assistance programs.)

ND: Nuclear Decommissioning (A fee to restore nuclear plant sites to as near their original condition as possible once they are shut down.)

CTC: Competition Transition Charge (A nonbypassable charge on each customer of the distribution utility, including those who are served under contracts with nonutility suppliers, for recovery of the utility's transition costs.)

RS: Reliability Services (Charges for services provided by generating facilities to maintain system reliability.)

DWR: Department of Water Resources (Operates and maintains the State Water Project, including the California Aqueduct. Also provides dam safety and flood control services, assists local water districts in water management and conservation, promotes recreational opportunities, and plans for future statewide water needs.)

- VGI Distribution Rate, which includes Distribution base rate, and a CPP hourly adder applied to the circuit's top 200 hours.

ORA has identified the following issues with the SDG&E's VGI Pilot Program rate design:

1. ORA needs to review the reasonableness of the VGI rate components. These rates should properly reflect cost-causation and satisfy the Commission's main rate design goals.
2. SDG&E should provide sample customer bill impacts based on tariff changes (i.e. bill impact showing a customer changes from a current EV rate or a regular residential rate schedule to the VGI rate) so that customers will be better informed about these rate choices.
3. If the Commission determines that the ratepayers should provide some funding of the VGI pilot program, the costs should be assigned based on both generation and distribution revenue allocators.

These rate design issues are discussed below.

**Design of Commodity CPP Adder**

SDG&E mimics the current CPP rate design to develop its VGI Commodity CPP (C-CPP) adder, except that the current CPP rates are triggered by roughly 18 event days,[21] while the latter is applied to hours in which the CAISO day-ahead demand forecast exceeds the top 150 hours of the prior year. The C-CPP is intended to cover the generation capacity costs. SDG&E appears to identify two-thirds of the commodity rate as variable costs that are considered part of the commodity base rate, which is applied uniformly to all hours throughout the year. The remaining one-third of the rate would be demand-

[21] SDG&E's medium and large C&I default rates are CPP rates though they can opt out to regular time of use (TOU) rates. The current CPP allows for 0 to 18 event days to be called per calendar year. The CPP adder is applied to 11 am to 6 pm on the event days. So, theoretically, there may be 0 to 126 hours of event day hours in one calendar year. (Direct Testimony of Cynthia Fan of SDG&E, Chapter 3, p. CF-10.)

related and recovered through C-CPP. The latter is converted to a 62.24 cents/kWh surcharge based on the 150 system top demand hours. [22]

ORA and other parties should have the opportunity to evaluate the reasonableness of SDG&E's rationale to have the system's top 150 top hours serve as CPP hours as well as the cost-basis SDG&E used to develop the C-CPP adder. When designing the commodity base rate, SDG&E counted roughly only 15 percent of the commodity revenue as related to costs that are variable on a day-ahead basis. It is not clear whether or not these commodity variable costs that are removed from the base rate properly reflect the CAISO day-ahead prices that in turn are added to the base rate during event periods. SDG&E needs to make sure that the customers who sign up for these new rates will not be overcharged. ORA and parties should also examine the robustness of a price signal that is based on current day-ahead demand forecast compared to the prior year's demand.

**Design of Distribution CPP Adder**

SDG&E designs the D-CPP in a manner similar to the C-CPP. The D-CPP is intended to address local maximum demand. SDG&E proposes to apply the D-CPP adder to the top 200 hours on a day-ahead basis when the forecasted load exceeds a threshold level based on historical load. SD&E states that the historical circuit load will be used to determine the threshold amount for forecasting the top 200 circuit peak hours. SDG&E also proposes to recover 50% of the distribution demand costs through D-CPP, while the remainder would be recovered through hourly distribution rate (and is considered the distribution base rate). [23]

Again, ORA and other parties should review SDG&E's load data, cost information, and whether or not its proposals satisfy the majority of the Commission's rate design principles.

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[22] Direct Testimony of Cynthia Fan of SDG&E, Chapter 3, p. CF-9, Table CF-2.
[23] Id, pp.CF-18, 19.

**Rate and Bill Impact**

SDG&E presented some bill impacts in its testimony. These bill impacts, however, merely reflect the rate increase that results from adding the VGI infrastructure.[24] They are not the bill impacts that customers would experience from switching from their current rate schedules to the VGI rate schedule. SDG&E should provide sample customer bill impacts based on tariff changes so that customers will be better informed about these rate choices.

**Cost Allocation**

SDG&E proposes to recover its VGI costs through distribution rates.[25] ORA does not object to recovering the prudent costs through distribution rates. However, the costs should not be assigned to customer classes using only a distribution allocator as the VGI rates are intended to defer both generation and distribution investments. Therefore, the costs should be assigned based on both generation and distribution revenue allocators.

**F. GHG.**

Public Utilities Code 748.5 and D.12-12-033[26] establish the following requirements for funding projects with the electric utilities' GHG allowance revenues:

1) The appropriate venue for deciding the manner in which GHG allowance revenues should be allocated toward energy efficiency and clean energy programs is within the various proceedings specifically opened to make such decisions.[27]
2) The energy efficiency or clean energy program must not otherwise be funded.[28]

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[24] Direct Testimony of Cynthia Fan of SDG&E, Chapter 3, pp. CF-20 & 21.

[25] Direct Testimony of Cynthia Fan of SDG&E, Chapter 3, p. CF-20.

[26] Order Instituting Rulemaking to Address Utility Cost and Revenue Issues Associated with Greenhouse Gas Emissions (R.11-03-012).

[27] D.12-12-033, p.185, Finding of Fact 140.

[28] D.12-12-033, p.185, Finding of Fact 141.

3) If, at a later date, the Commission elects to direct funds toward energy efficiency and/or clean energy, the Commission recommends that any program or project funded with GHG allowance revenues have as a primary goal the reduction of GHG emissions. While ultimately all energy efficiency and clean energy projects and programs can result in the reduction of GHG emissions, we find it appropriate to require GHG emissions reductions as a stated (and measurable) goal of a project in order to receive funding via GHG allowance revenues.[29]

SDG&E's application does not demonstrate that the VGI Pilot Program has a stated and measurable primary goal to directly reduce GHG emissions. SDG&E must provide more information regarding the GHG implications of this project before it should be considered to receive funding from GHG allowance revenues. Specifically, SDG&E must explain how GHG reductions resulting from the VGI pilot program will be measured and evaluated. In Chapter 6, testimony of J.C. Martin, SDG&E states that among the data collected and analysis planned for the VGI Pilot Program are:

- Estimated percentage of EV purchases related to the VGI Pilot Program (gathered through surveys of EV customers using the VGI facilities);
- Estimated VGI Pilot Program-related increases in ZEV miles traveled per EV (gathered through surveys of EV customers using the VGI facilities).

This data could provide some insight into GHG reductions associated with the proposed VGI Pilot Program, however a more developed methodology to measure GHG reductions should be required in order to receive funding from GHG allowance revenues.

[29] D.12-12-033, p.135.

## IV. PROCEDURAL ISSUES

### 1. Category

SDG&E proposes that this proceeding be categorized as "ratesetting." ORA agrees with SDG&E's proposed category.

### 2. Need for Hearings

SDG&E believes that evidentiary hearings will be required. ORA agrees, but the Commission should require SDG&E to amend its application to allow SDG&E to address ORA's concerns raised in this protest before scheduling any hearings.

### 3. Proposed Schedule

If the Commission determines that no amendments are necessary ORA would agree with part of the schedule[30] proposed by SDG&E. ORA has identified several issues that are material and in dispute. Therefore, ORA may require additional time to conduct discovery and to review and analyze any responses. ORA will be more prepared to provide input regarding the schedule at the prehearing conference. The following compares SDG&E's proposed schedule with that of ORA's:

| 2014 | SDG&E | ORA |
|---|---|---|
| Utility-Led Workshop (San Diego) | Week of April 28 | - |
| Utility-Led Workshop (San Francisco) | Week of May 5 | - |
| Responses/Protests Due | May 12 | May12 |
| Reply to Responses/Protests | May 22 | May22 |
| Prehearing Conference | May 30 | May30 |
| Scoping Memo Issued | June 6 | June 6 |
| ORA and Intervenor Testimony | July 7 | August 7 |
| Concurrent Rebuttal Testimony | July 21 | August 29 |
| Evidentiary Hearings, if necessary | July 28 29 | Sep. 8-9 |
| Opening Briefs | Sep. 2 | Oct. 2 |

[30] A.14-04-014. p. 7.

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|---|---|---|
| Reply Briefs | Sep. 16 | Oct. 16 |
| Proposed Decision | Nov. 14 | Dec. 14 |

## V. CONCLUSION

The Commission should require SDG&E to amend its application to allow it to address ORA's concerns raised in this protest. ORA is willing to work with SDG&E regarding the VGI pilot's goals and the evaluation/measurement methodology.

Respectfully submitted,

/s/ IRYNA A. KWASNY

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